



## SEQUENCE LISTING

<110> Ullrich, Axel  
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Nayler, Oliver  
Kharitononkov, Alexei

<120> NOVEL PTP-20, PCP-2, BDP1, CLK, AND SIRP PROTEINS  
AND RELATED PRODUCTS AND METHODS

<130> 034536-1481

<140> 10/087,993

<141> 2002-03-05

<150> 08/877,150

<151> 1997-06-17

<150> 60/023,485

<151> 1996-11-13

<150> 60/030,860

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<150> 60/034,286

<151> 1996-12-19

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<160> 41

<170> PatentIn Ver. 3.2

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<223> Ser, Ile or Val

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 Ser Lys Thr Thr Asp Ser Tyr Tyr Leu Glu Ser Arg Ser Ile Asn Glu  
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 Lys Ala Tyr His Ser Arg Arg Tyr Val Asp Glu Tyr Arg Asn Asp Tyr  
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 Met Gly Tyr Glu Pro Gly His Pro Tyr Gly Glu Pro Gly Ser Arg Tyr  
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 Gln Met His Ser Ser Lys Ser Ser Gly Arg Ser Gly Arg Ser Ser Tyr  
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 Lys Ser Lys His Arg Ser Arg His His Thr Ser Asp His His Ser His  
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 Gly His Ser His Arg Arg Lys Arg Ser Arg Ser Val Glu Asp Asp Glu  
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 Lys Asn Val Asp Arg Tyr Cys Glu Ala Ala Gln Ser Glu Ile Gln Val  
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Lys Ser Val Asn Phe Leu His Ser Asn Lys Leu Thr His Thr Asp Leu  
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 Val Val Asp Phe Gly Ser Ala Thr Tyr Asp Asp Glu His His Ser Thr  
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 Leu Val Ser Thr Arg His Tyr Arg Ala Pro Glu Val Ile Leu Ala Leu  
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 Gly Trp Ser Gln Pro Cys Asp Val Trp Ser Ile Gly Cys Ile Leu Ile  
                   355                                  360                                  365  
 Glu Tyr Tyr Leu Gly Phe Thr Val Phe Pro Thr His Asp Ser Arg Glu  
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 His Leu Ala Met Met Glu Arg Ile Leu Gly Pro Leu Pro Lys His Met  
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 Ile Gln Lys Thr Arg Lys Arg Arg Tyr Phe His His Asp Arg Leu Asp  
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 Trp Asp Glu His Ser Ser Ala Gly Arg Tyr Val Ser Arg Arg Cys Lys  
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 <222> (2)  
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<210> 9  
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28

<210> 10  
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<400> 10  
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<210> 12  
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<210> 13  
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32

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<210> 22  
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<210> 25  
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<210> 26

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<210> 27

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<210> 28

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<210> 29

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aag aag aac cgc tac aaa gac gtg gta ccg tat gat gag acg aga gtc 246  
Lys Lys Asn Arg Tyr Lys Asp Val Val Pro Tyr Asp Glu Thr Arg Val  
60 65 70

atc ctt tcc ctg ctc cag gag gaa gga cac gga gat tac att aat gcc 294  
Ile Leu Ser Leu Leu Gln Glu Glu Gly His Gly Asp Tyr Ile Asn Ala  
75 80 85

aac ttc atc cgg ggc aca gat gga agc cag gcc tac att gcg acg caa 342  
Asn Phe Ile Arg Gly Thr Asp Gly Ser Gln Ala Tyr Ile Ala Thr Gln  
90 95 100 105

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Gly Pro Leu Pro His Thr Leu Leu Asp Phe Trp Arg Leu Val Trp Glu  
110 115 120

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Ala Gly Pro Phe Cys Ile Thr Leu Thr Lys Glu Thr Ala Leu Thr Ser	
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Gly Arg Thr Gly Val Leu Cys Ala Val Asp Tyr Val Arg Gln Leu Leu	
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His Thr Glu Asn Ala Gln Gly Thr Thr Ala Leu Gly Arg Val Pro Ala	
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Ala Gln Thr Gly Gly Leu Gly Phe Asn Leu Arg Ile Gly Arg Pro Lys	
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Gly Pro Arg Asp Pro Pro Ala Glu Trp Thr Arg Val	
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<213> Rattus rattus
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Arg Thr Ser Ser Ala Leu Pro Ala Thr Ser Arg Pro Leu Gly Gly Val  
325 330 335

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340 345 350

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Met Ala Arg Ala Gln Ala Leu Val Leu Ala Leu Thr Phe  
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Glu	Glu	Ala	Ser	Asp	Pro	Ala	Val	Pro	Cys	Glu	Tyr	Ser	Gln	Ala	Gln	
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Tyr	Asp	Asp	Phe	Gln	Trp	Glu	Gln	Val	Arg	Ile	His	Pro	Gly	Thr	Arg	
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Gln	His	Ala	Pro	Gly	Gln	Arg	Ala	His	Val	Ile	Phe	Gln	Ser	Leu	Ser	
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gag	aat	gat	acc	cac	tgt	gtg	cag	ttc	agc	tac	ttc	ctg	tac	agc	cgg	459
Glu	Asn	Asp	Thr	His	Cys	Val	Gln	Phe	Ser	Tyr	Phe	Leu	Tyr	Ser	Arg	
	95					100					105					
gac	ggc	aca	ggc	ggc	acc	ctg	cgc	gtc	tac	gtg	cgc	gtt	aat	ggg	ggc	507
Asp	Gly	Thr	Gly	Gly	Thr	Leu	Arg	Val	Tyr	Val	Arg	Val	Asn	Gly	Gly	
	110				115					120				125		
ccc	ctg	gcg	agt	gct	gtg	tgg	aat	atg	act	gga	tcc	cac	ggc	cgt	cag	555
Pro	Leu	Ala	Ser	Ala	Val	Trp	Asn	Met	Thr	Gly	Ser	His	Gly	Arg	Gln	
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tgg	cac	cag	gct	gag	ctg	gct	gtc	agc	act	ttc	tgg	ccc	aat	gaa	tat	603
Trp	His	Gln	Ala	Glu	Leu	Ala	Val	Ser	Thr	Phe	Trp	Pro	Asn	Glu	Tyr	
			145					150					155			
cag	gtg	ctg	ttt	gag	gcc	ctc	atc	tcc	cca	gac	cgc	agg	ggc	tac	atg	651
Gln	Val	Leu	Phe	Glu	Ala	Leu	Ile	Ser	Pro	Asp	Arg	Arg	Gly	Tyr	Met	
		160					165					170				
ggc	cta	gat	gac	atc	ctg	ctt	ctc	agc	tac	ccc	tgc	gca	aag	gcc	cca	699
Gly	Leu	Asp	Asp	Ile	Leu	Leu	Leu	Ser	Tyr	Pro	Cys	Ala	Lys	Ala	Pro	
	175					180					185					
cac	ttc	tcc	cgc	ctg	ggc	gac	gtg	gag	gtc	aac	gcg	ggc	cag	aac	gcg	747
His	Phe	Ser	Arg	Leu	Gly	Asp	Val	Glu	Val	Asn	Ala	Gly	Gln	Asn	Ala	
	190				195					200					205	
tcg	ttc	cag	tgc	atg	gcc	gcg	gga	gag	ccc	atg	cgc	caa	cgc	ttc	ctc	795
Ser	Phe	Gln	Cys	Met	Ala	Ala	Gly	Glu	Pro	Met	Arg	Gln	Arg	Phe	Leu	
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ttg	caa	cgg	cag	agc	ggg	gcc	ctg	gtg	ccg	gcc	ggg	gcg	ttc	ggc	aca	843
Leu	Gln	Arg	Gln	Ser	Gly	Ala	Leu	Val	Pro	Ala	Gly	Ala	Phe	Gly	Thr	
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tca	gcc	acc	ggc	ttc	ctg	gcc	act	ttc	ccg	ctg	gct	gcc	gtg	agc	cgc	891
Ser	Ala	Thr	Gly	Phe	Leu	Ala	Thr	Phe	Pro	Leu	Ala	Ala	Val	Ser	Arg	
		240					245					250				
gcc	gag	cag	gac	ctg	tac	cgc	tgt	gtg	tcc	cag	gcc	ccg	cgc	ggc	ggc	939
Ala	Glu	Gln	Asp	Leu	Tyr	Arg	Cys	Val	Ser	Gln	Ala	Pro	Arg	Gly	Gly	
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gtc	tct	aac	ttc	ccg	gag	ctc	atc	gtc	aag	gag	ccc	cca	act	ccc	atc	987
Val	Ser	Asn	Phe	Pro	Glu	Leu	Ile	Val	Lys	Glu	Pro	Pro	Thr	Pro	Ile	
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gcg	ccc	cca	cag	ctg	ctg	cgt	gct	ggc	ccc	acc	tac	ctc	atc	atc	cag	1035
Ala	Pro	Pro	Gln	Leu	Leu	Arg	Ala	Gly	Pro	Thr	Tyr	Leu	Ile	Ile	Gln	
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ctc	aac	acc	aac	tcc	atc	att	ggc	gac	ggg	ccg	atc	gtg	cgc	aag	gag	1083
Leu	Asn	Thr	Asn	Ser	Ile	Ile	Gly	Asp	Gly	Pro	Ile	Val	Arg	Lys	Glu	
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Ile	Glu	Tyr	Arg	Met	Ala	Arg	Gly	Pro	Trp	Ala	Glu	Val	His	Ala	Val	
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agc	ctg	cag	acc	tac	aag	ctg	tgg	cac	ctc	gac	ccc	gac	aca	gac	tat	1179
Ser	Leu	Gln	Thr	Tyr	Lys	Leu	Trp	His	Leu	Asp	Pro	Asp	Thr	Asp	Tyr	
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gag	atc	agc	gtg	ctg	ctc	acg	cgt	ccc	gga	gac	ggc	ggc	act	ggc	cgc	1227
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tgg	gcc	acc	cct	cat	cag	ccg	cac	caa	atg	cgc	aga	gcc	cat	gag	ggc	1275
Trp	Ala	Thr	Pro	His	Gln	Pro	His	Gln	Met	Arg	Arg	Ala	His	Glu	Gly	
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ccc	aaa	ggc	ctg	gct	ttt	gct	gag	atc	cag	gcc	cgt	cag	ctg	acc	ctg	1323
Pro	Lys	Gly	Leu	Ala	Phe	Ala	Glu	Ile	Gln	Ala	Arg	Gln	Leu	Thr	Leu	
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cag	tgg	gaa	cca	ctg	ggc	tac	aac	gtg	acg	cgt	tgc	cac	acc	tat	act	1371
Gln	Trp	Glu	Pro	Leu	Gly	Tyr	Asn	Val	Thr	Arg	Cys	His	Thr	Tyr	Thr	
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Val	Ser	Leu	Cys	Tyr	His	Tyr	Thr	Leu	Gly	Ser	Ser	His	Asn	Gln	Thr	
	415					420					425					
atc	cga	gag	tgt	gtg	aag	aca	gag	caa	ggc	gtc	agc	cgc	tac	acc	atc	1467
Ile	Arg	Glu	Cys	Val	Lys	Thr	Glu	Gln	Gly	Val	Ser	Arg	Tyr	Thr	Ile	
430					435					440					445	
aag	aac	ctg	ctg	ccc	tat	cgg	aac	gtt	cac	gtg	agg	ctt	gtc	ctc	act	1515
Lys	Asn	Leu	Leu	Pro	Tyr	Arg	Asn	Val	His	Val	Arg	Leu	Val	Leu	Thr	
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Asn Pro Glu Gly Arg Lys Glu Gly Lys Glu Val Thr Phe Gln Thr Asp	
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 gag gat gtg ccc agt ggg att gca gcc gag tcc ctg acc ttc act cca	1611
Glu Asp Val Pro Ser Gly Ile Ala Ala Glu Ser Leu Thr Phe Thr Pro	
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 ctg gag gac atg atc ttc ctc aag tgg gag gag ccc cag gag ccc aat	1659
Leu Glu Asp Met Ile Phe Leu Lys Trp Glu Glu Pro Gln Glu Pro Asn	
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 ggt ctc atc acc cag tat gag atc agc tac cag agc atc gag tca tca	1707
Gly Leu Ile Thr Gln Tyr Glu Ile Ser Tyr Gln Ser Ile Glu Ser Ser	
510 515 520 525	
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Asp Pro Ala Val Asn Val Pro Gly Pro Arg Arg Thr Ile Ser Lys Leu	
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Arg Asn Glu Thr Tyr His Val Phe Ser Asn Leu His Pro Gly Thr Thr	
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Tyr Leu Phe Ser Val Arg Ala Arg Thr Gly Lys Gly Phe Gly Gln Ala	
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Ala Leu Thr Glu Ile Thr Thr Asn Ile Ser Ala Pro Ser Phe Asp Tyr	
575 580 585	
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Ala Asp Met Pro Ser Pro Leu Gly Glu Ser Glu Asn Thr Ile Thr Val	
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Leu Leu Arg Pro Ala Gln Gly Arg Gly Ala Pro Ile Ser Val Tyr Gln	
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Val Ile Val Glu Glu Glu Arg Ala Arg Gly Cys Gly Gly Thr Arg Trp	
625 630 635	
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Thr Gly Leu Leu Pro Ser Ala Ile Asp Leu Arg Gly Gly Ala Gly Pro	
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Arg Leu Val His Tyr Phe Gly Ala Glu Leu Ala Ala Ser Ser Leu Pro	
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 gag gcc atg ccc ttt acc gtg ggt gac aac cag acc tac cga ggc ttc	2187
Glu Ala Met Pro Phe Thr Val Gly Asp Asn Gln Thr Tyr Arg Gly Phe	
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Trp Asn Pro Pro Leu Glu Pro Arg Lys Ala Tyr Leu Ile Tyr Phe Gln	
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Ala Ala Ser His Leu Lys Gly Glu Thr Arg Leu Asn Cys Ile Arg Ile	
705 710 715	
gcc agg aaa gct gcc tgc aag gaa agc aag cgg ccc ctg gag gtg tcc	2331
Ala Arg Lys Ala Ala Cys Lys Glu Ser Lys Arg Pro Leu Glu Val Ser	
720 725 730	
cag aga tcg gag gag atg ggg ctt atc ctg ggc atc tgt gca ggg ggg	2379
Gln Arg Ser Glu Glu Met Gly Leu Ile Leu Gly Ile Cys Ala Gly Gly	
735 740 745	
ctt gct gtc ctc atc ctt ctc ctg ggt gcc atc att gtc atc atc cgc	2427
Leu Ala Val Leu Ile Leu Leu Leu Gly Ala Ile Ile Val Ile Ile Arg	
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Lys Gly Lys Pro Val Asn Met Thr Lys Ala Thr Val Asn Tyr Arg Gln	
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Glu Lys Thr His Met Ile Ser Ala Val Asp Arg Ser Phe Thr Asp Gln	
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Ser Thr Leu Gln Glu Asp Glu Arg Leu Gly Leu Ser Phe Met Asp Thr	
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His Gly Tyr Ser Thr Arg Gly Asp Gln Arg Ser Gly Gly Val Thr Glu	
815 820 825	
gcc agc agc ctc ctg ggg ggc tcc ccg agg cgt ccc tgt ggc cgg aag	2667
Ala Ser Ser Leu Leu Gly Gly Ser Pro Arg Arg Pro Cys Gly Arg Lys	
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Gly Ser Pro Tyr His Thr Gly Gln Leu His Pro Ala Val Arg Val Ala	
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Lys Lys Asp Lys Val Lys Gly Ser Arg Gln Glu Pro Met Pro Ala Tyr	
895 900 905	

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Asp	Arg	His	Arg	Val	Lys	Leu	His	Pro	Met	Leu	Gly	Asp	Pro	Asn	Ala	
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Asp	Tyr	Ile	Asn	Ala	Asn	Tyr	Ile	Asp	Gly	Tyr	His	Arg	Ser	Asn	His	
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ttc	ata	gcc	act	caa	ggg	ccg	aag	cct	gag	atg	gtc	tat	gac	ttc	tgg	3003
Phe	Ile	Ala	Thr	Gln	Gly	Pro	Lys	Pro	Glu	Met	Val	Tyr	Asp	Phe	Trp	
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cgt	atg	gtg	tgg	cag	gag	cac	tgt	tcc	agc	atc	gtc	atg	atc	acc	aag	3051
Arg	Met	Val	Trp	Gln	Glu	His	Cys	Ser	Ser	Ile	Val	Met	Ile	Thr	Lys	
		960					965						970			
ctg	gtc	gag	gtg	ggc	agg	gtg	aaa	tgc	tca	cgg	tac	tgg	ccg	gag	gac	3099
Leu	Val	Glu	Val	Gly	Arg	Val	Lys	Cys	Ser	Arg	Tyr	Trp	Pro	Glu	Asp	
	975					980					985					
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Ser	Asp	Thr	Tyr	Gly	Asp	Ile	Lys	Ile	Met	Leu	Val	Lys	Thr	Glu	Thr	
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Leu	Ala	Glu	Tyr	Val	Val	Arg	Thr	Phe	Ala	Leu	Glu	Arg	Arg	Gly	Tyr	
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Ser	Ala	Arg	His	Glu	Val	Arg	Gln	Ser	His	Phe	Thr	Ala	Trp	Pro	Glu	
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cat	ggc	gtc	ccc	tac	cat	gcc	acg	ggg	ctg	ctg	gct	ttc	atc	cgg	cgg	3291
His	Gly	Val	Pro	Tyr	His	Ala	Thr	Gly	Leu	Leu	Ala	Phe	Ile	Arg	Arg	
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Val	Lys	Ala	Ser	Thr	Pro	Pro	Asp	Ala	Gly	Pro	Ile	Val	Ile	His	Cys	
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Ser	Ala	Gly	Thr	Gly	Arg	Thr	Arg	Cys	Tyr	Ile	Val	Leu	Asp	Val	Met	
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Leu	Asp	Met	Ala	Glu	Cys	Glu	Gly	Val	Val	Asp	Ile	Tyr	Asn	Cys	Val	
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aag	act	ctc	tgc	tcc	cgg	cgt	gtc	aac	atg	atc	cag	act	gag	gag	cag	3483
Lys	Thr	Leu	Cys	Ser	Arg	Arg	Val	Asn	Met	Ile	Gln	Thr	Glu	Glu	Gln	
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Tyr	Ile	Phe	Ile	His	Asp	Ala	Ile	Leu	Glu	Ala	Cys	Leu	Cys	Gly	Glu	
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cgc att gat cct cag agt aat tcc tcc cag ctg cgg gaa gag ttc cag	3627
Arg Ile Asp Pro Gln Ser Asn Ser Ser Gln Leu Arg Glu Glu Phe Gln	
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Ala Leu Leu Pro Arg Asn Arg Asp Lys Asn Arg Ser Met Asp Val Leu	
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Ala Phe Met Val Thr Leu His Pro Leu Gln Ser Thr Thr Pro Asp Phe	
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Trp Arg Leu Val Tyr Asp Tyr Gly Cys Thr Ser Ile Val Met Leu Asn	
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Gln Leu Asn Gln Ser Asn Ser Ala Trp Pro Cys Leu Gln Tyr Trp Pro	
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 Asp Leu Pro His Gly Ser Tyr Leu Met Val Asn Thr Ser Gln His Ala  
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 Pro Gly Gln Arg Ala His Val Ile Phe Gln Ser Leu Ser Glu Asn Asp  
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 Thr His Cys Val Gln Phe Ser Tyr Phe Leu Tyr Ser Arg Asp Gly Thr  
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 Gly Gly Thr Leu Arg Val Tyr Val Arg Val Asn Gly Gly Pro Leu Ala  
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 Ala Glu Leu Ala Val Ser Thr Phe Trp Pro Asn Glu Tyr Gln Val Leu  
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 Gln Ser Gly Ala Leu Val Pro Ala Gly Ala Phe Gly Thr Ser Ala Thr  
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Gln	Leu	Leu	Arg	Ala	Gly	Pro	Thr	Tyr	Leu	Ile	Ile	Gln	Leu	Asn	Thr		
	290					295					300						
Asn	Ser	Ile	Ile	Gly	Asp	Gly	Pro	Ile	Val	Arg	Lys	Glu	Ile	Glu	Tyr		
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Arg	Met	Ala	Arg	Gly	Pro	Trp	Ala	Glu	Val	His	Ala	Val	Ser	Leu	Gln		
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Thr	Tyr	Lys	Leu	Trp	His	Leu	Asp	Pro	Asp	Thr	Asp	Tyr	Glu	Ile	Ser		
			340					345					350				
Val	Leu	Leu	Thr	Arg	Pro	Gly	Asp	Gly	Gly	Thr	Gly	Arg	Trp	Ala	Thr		
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Pro	His	Gln	Pro	His	Gln	Met	Arg	Arg	Ala	His	Glu	Gly	Pro	Lys	Gly		
	370					375					380						
Leu	Ala	Phe	Ala	Glu	Ile	Gln	Ala	Arg	Gln	Leu	Thr	Leu	Gln	Trp	Glu		
385					390					395					400		
Pro	Leu	Gly	Tyr	Asn	Val	Thr	Arg	Cys	His	Thr	Tyr	Thr	Val	Ser	Leu		
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Cys	Tyr	His	Tyr	Thr	Leu	Gly	Ser	Ser	His	Asn	Gln	Thr	Ile	Arg	Glu		
			420					425					430				
Cys	Val	Lys	Thr	Glu	Gln	Gly	Val	Ser	Arg	Tyr	Thr	Ile	Lys	Asn	Leu		
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Leu	Pro	Tyr	Arg	Asn	Val	His	Val	Arg	Leu	Val	Leu	Thr	Asn	Pro	Glu		
	450					455					460						
Gly	Arg	Lys	Glu	Gly	Lys	Glu	Val	Thr	Phe	Gln	Thr	Asp	Glu	Asp	Val		
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Pro	Ser	Gly	Ile	Ala	Ala	Glu	Ser	Leu	Thr	Phe	Thr	Pro	Leu	Glu	Asp		
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Met	Ile	Phe	Leu	Lys	Trp	Glu	Glu	Pro	Gln	Glu	Pro	Asn	Gly	Leu	Ile		
			500					505					510				
Thr	Gln	Tyr	Glu	Ile	Ser	Tyr	Gln	Ser	Ile	Glu	Ser	Ser	Asp	Pro	Ala		
		515					520					525					
Val	Asn	Val	Pro	Gly	Pro	Arg	Arg	Thr	Ile	Ser	Lys	Leu	Arg	Asn	Glu		
	530					535					540						
Thr	Tyr	His	Val	Phe	Ser	Asn	Leu	His	Pro	Gly	Thr	Thr	Tyr	Leu	Phe		
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 Glu Ile Thr Thr Asn Ile Ser Ala Pro Ser Phe Asp Tyr Ala Asp Met  
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 Pro Ser Pro Leu Gly Glu Ser Glu Asn Thr Ile Thr Val Leu Leu Arg  
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 Glu Glu Glu Arg Ala Arg Gly Cys Gly Gly Thr Arg Trp Thr Gly Leu  
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 His Tyr Phe Gly Ala Glu Leu Ala Ala Ser Ser Leu Pro Glu Ala Met  
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 Pro Phe Thr Val Gly Asp Asn Gln Thr Tyr Arg Gly Phe Trp Asn Pro  
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 Pro Leu Glu Pro Arg Lys Ala Tyr Leu Ile Tyr Phe Gln Ala Ala Ser  
 690 695 700  
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 Glu Glu Met Gly Leu Ile Leu Gly Ile Cys Ala Gly Gly Leu Ala Val  
 740 745 750  
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 Pro Val Asn Met Thr Lys Ala Thr Val Asn Tyr Arg Gln Glu Lys Thr  
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 His Met Ile Ser Ala Val Asp Arg Ser Phe Thr Asp Gln Ser Thr Leu  
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 Tyr His Thr Gly Gln Leu His Pro Ala Val Arg Val Ala Asp Leu Leu  
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Gln His Ile Asn Gln Met Lys Thr Ala Glu Gly Tyr Gly Phe Lys Gln  
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 Glu Tyr Glu Ser Phe Phe Glu Gly Trp Asp Ala Thr Lys Lys Lys Asp  
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 Lys Val Lys Gly Ser Arg Gln Glu Pro Met Pro Ala Tyr Asp Arg His  
 900 905 910  
 Arg Val Lys Leu His Pro Met Leu Gly Asp Pro Asn Ala Asp Tyr Ile  
 915 920 925  
 Asn Ala Asn Tyr Ile Asp Gly Tyr His Arg Ser Asn His Phe Ile Ala  
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 Thr Gln Gly Pro Lys Pro Glu Met Val Tyr Asp Phe Trp Arg Met Val  
 945 950 955 960  
 Trp Gln Glu His Cys Ser Ser Ile Val Met Ile Thr Lys Leu Val Glu  
 965 970 975  
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 980 985 990  
 Tyr Gly Asp Ile Lys Ile Met Leu Val Lys Thr Glu Thr Leu Ala Glu  
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 His Glu Val Arg Gln Ser His Phe Thr Ala Trp Pro Glu His Gly Val  
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 Ser Thr Pro Pro Asp Ala Gly Pro Ile Val Ile His Cys Ser Ala Gly  
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 Thr Gly Arg Thr Arg Cys Tyr Ile Val Leu Asp Val Met Leu Asp Met  
 1075 1080 1085  
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 1090 1095 1100  
 Cys Ser Arg Arg Val Asn Met Ile Gln Thr Glu Glu Gln Tyr Ile Phe  
 1105 1110 1115 1120  
 Ile His Asp Ala Ile Leu Glu Ala Cys Leu Cys Gly Glu Thr Thr Ile  
 1125 1130 1135  
 Pro Val Ser Glu Phe Lys Ala Thr Tyr Lys Glu Met Ile Arg Ile Asp  
 1140 1145 1150  
 Pro Gln Ser Asn Ser Ser Gln Leu Arg Glu Glu Phe Gln Thr Leu Asn  
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Ser Val Thr Pro Pro Leu Asp Val Glu Glu Cys Ser Ile Ala Leu Leu  
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 Pro Arg Asn Arg Asp Lys Asn Arg Ser Met Asp Val Leu Pro Pro Asp  
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 Arg Cys Leu Pro Phe Leu Ile Ser Thr Asp Gly Asp Ser Asn Asn Tyr  
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 Ile Asn Ala Ala Leu Thr Asp Ser Tyr Thr Arg Arg Ser Ala Phe Met  
 1220 1225 1230  
 Val Thr Leu His Pro Leu Gln Ser Thr Thr Pro Asp Phe Trp Arg Leu  
 1235 1240 1245  
 Val Tyr Asp Tyr Gly Cys Thr Ser Ile Val Met Leu Asn Gln Leu Asn  
 1250 1255 1260  
 Gln Ser Asn Ser Ala Trp Pro Cys Leu Gln Tyr Trp Pro Glu Pro Gly  
 1265 1270 1275 1280  
 Arg Gln Gln Tyr Gly Leu Met Glu Val Glu Phe Met Ser Gly Thr Ala  
 1285 1290 1295  
 Asp Glu Asp Leu Val Ala Arg Val Phe Arg Val Gln Asn Ile Ser Arg  
 1300 1305 1310  
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 1315 1320 1325  
 Ser Ala Tyr Arg Asp Thr Pro Asp Ser Lys Lys Ala Phe Leu His Leu  
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 1380 1385 1390  
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 <212> DNA  
 <213> Homo sapiens

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&lt;221&gt; CDS

&lt;222&gt; (44)..(1417)

&lt;400&gt; 35

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Leu Asp Ser Ala Arg Ser Phe Leu Glu Arg Leu Glu Ala Arg Gly Gly
 5                10                15                20

cgg gag ggg gca gtc ctc gcc ggc gag ttc agc gac atc cag gcc tgc 151
Arg Glu Gly Ala Val Leu Ala Gly Glu Phe Ser Asp Ile Gln Ala Cys
                25                30                35

tcg gcc gcc tgg aag gct gac ggc gtg tgc tcc acc gtg gcc ggc agt 199
Ser Ala Ala Trp Lys Ala Asp Gly Val Cys Ser Thr Val Ala Gly Ser
                40                45                50

cgg cca gag aac gtg agg aag aac cgc tac aaa gac gtg ctg cct tat 247
Arg Pro Glu Asn Val Arg Lys Asn Arg Tyr Lys Asp Val Leu Pro Tyr
                55                60                65

gat cag acg cga gta atc ctc tcc ctg ctc cag gaa gag gga cac agc 295
Asp Gln Thr Arg Val Ile Leu Ser Leu Leu Gln Glu Glu Gly His Ser
                70                75                80

gac tac att aat ggc aac ttc atc cgg ggc gtg gat gga agc ctg gcc 343
Asp Tyr Ile Asn Gly Asn Phe Ile Arg Gly Val Asp Gly Ser Leu Ala
 85                90                95                100

tac att gcc acg caa gga ccc ttg cct cac acc ctg cta gac ttc tgg 391
Tyr Ile Ala Thr Gln Gly Pro Leu Pro His Thr Leu Leu Asp Phe Trp
                105                110                115

aga ctg gtc tgg gag ttt ggg gtc aag gtg atc ctg atg gcc tgt cga 439
Arg Leu Val Trp Glu Phe Gly Val Lys Val Ile Leu Met Ala Cys Arg
                120                125                130

gag ata gag aat ggg cgg aaa agg tgt gag cgg tac tgg gcc cag gag 487
Glu Ile Glu Asn Gly Arg Lys Arg Cys Glu Arg Tyr Trp Ala Gln Glu
                135                140                145

cag gag cca ctg cag act ggg ctt ttc tgc atc act ctg ata aag gag 535
Gln Glu Pro Leu Gln Thr Gly Leu Phe Cys Ile Thr Leu Ile Lys Glu
                150                155                160

aag tgg ctg aat gag gac atc atg ctc agg acc ctc aag gtc aca ttc 583
Lys Trp Leu Asn Glu Asp Ile Met Leu Arg Thr Leu Lys Val Thr Phe
165                170                175                180

cag aag gag tcc cgt tct gtg tac cag cta cag tat atg tcc tgg cca 631
Gln Lys Glu Ser Arg Ser Val Tyr Gln Leu Gln Tyr Met Ser Trp Pro
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gac cgt ggg gtc ccc agc agt cct gac cac atg ctc gcc atg gtg gag 679

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Asp	Arg	Gly	Val	Pro	Ser	Ser	Pro	Asp	His	Met	Leu	Ala	Met	Val	Glu		
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Glu	Ala	Arg	Arg	Leu	Gln	Gly	Ser	Gly	Pro	Glu	Pro	Leu	Cys	Val	His		
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tgc	agt	gcg	ggg	tgt	ggg	cga	aca	ggc	gtc	ctg	tgc	acc	gtg	gat	tat	775	
Cys	Ser	Ala	Gly	Cys	Gly	Arg	Thr	Gly	Val	Leu	Cys	Thr	Val	Asp	Tyr		
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gtg	agg	cag	ctg	ctc	ctg	acc	cag	atg	atc	cca	cct	gac	ttc	agt	ctc	823	
Val	Arg	Gln	Leu	Leu	Leu	Thr	Gln	Met	Ile	Pro	Pro	Asp	Phe	Ser	Leu		
245					250					255					260		
ttt	gat	gtg	gtc	ctt	aag	atg	agg	aag	cag	cgg	cct	gcg	gcc	gtg	cag	871	
Phe	Asp	Val	Val	Leu	Lys	Met	Arg	Lys	Gln	Arg	Pro	Ala	Ala	Val	Gln		
				265					270					275			
aca	gag	gag	cag	tac	agg	ttc	ctg	tac	cac	acg	gtg	gct	cag	atg	ttc	919	
Thr	Glu	Glu	Gln	Tyr	Arg	Phe	Leu	Tyr	His	Thr	Val	Ala	Gln	Met	Phe		
			280					285					290				
tgc	tcc	aca	ctc	cag	aat	gcc	agc	ccc	cac	tac	cag	aac	atc	aaa	gag	967	
Cys	Ser	Thr	Leu	Gln	Asn	Ala	Ser	Pro	His	Tyr	Gln	Asn	Ile	Lys	Glu		
		295				300						305					
aat	tgt	gcc	cca	ctc	tac	gac	gat	gcc	ctc	ttc	ctc	cgg	act	ccc	cag	1015	
Asn	Cys	Ala	Pro	Leu	Tyr	Asp	Asp	Ala	Leu	Phe	Leu	Arg	Thr	Pro	Gln		
	310					315					320						
gca	ctt	ctc	gcc	ata	ccc	cgc	cca	cca	gga	ggg	gtc	ctc	agg	agc	atc	1063	
Ala	Leu	Leu	Ala	Ile	Pro	Arg	Pro	Pro	Gly	Gly	Val	Leu	Arg	Ser	Ile		
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Ser	Val	Pro	Gly	Ser	Pro	Gly	His	Ala	Met	Ala	Asp	Thr	Tyr	Ala	Glu		
				345					350					355			
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Glu	Gln	Lys	Arg	Gly	Ala	Pro	Ala	Gly	Ala	Gly	Ser	Gly	Thr	Gln	Thr		
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Gly	Thr	Gly	Thr	Gly	Ala	Arg	Ser	Ala	Glu	Glu	Ala	Pro	Leu	Tyr	Ser		
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Lys	Val	Thr	Pro	Arg	Ala	Gln	Arg	Pro	Gly	Ala	His	Ala	Glu	Asp	Ala		
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agg	ggg	acg	ctg	cct	ggc	cgc	gtt	cct	gct	gac	caa	agt	cct	gcc	gga	1303	
Arg	Gly	Thr	Leu	Pro	Gly	Arg	Val	Pro	Ala	Asp	Gln	Ser	Pro	Ala	Gly		
405					410					415					420		
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Ser	Gly	Ala	Tyr	Glu	Asp	Val	Ala	Gly	Gly	Ala	Gln	Thr	Gly	Gly	Leu		
				425					430					435			

ggt ttc aac ctg cgc att ggg agg ccg aag ggt ccc cgg gac ccg cct 1399  
 Gly Phe Asn Leu Arg Ile Gly Arg Pro Lys Gly Pro Arg Asp Pro Pro  
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gct gag tgg acc cgg gtg taagtctaac gccagttcct gcctgttgcc 1447  
 Ala Glu Trp Thr Arg Val  
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<210> 36

<211> 458

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 36

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Ile Gln Ala Cys Ser Ala Ala Trp Lys Ala Asp Gly Val Cys Ser Thr
          35              40              45

Val Ala Gly Ser Arg Pro Glu Asn Val Arg Lys Asn Arg Tyr Lys Asp
          50              55              60

Val Leu Pro Tyr Asp Gln Thr Arg Val Ile Leu Ser Leu Leu Gln Glu
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Glu Gly His Ser Asp Tyr Ile Asn Gly Asn Phe Ile Arg Gly Val Asp
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Gly Ser Leu Ala Tyr Ile Ala Thr Gln Gly Pro Leu Pro His Thr Leu
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Leu Asp Phe Trp Arg Leu Val Trp Glu Phe Gly Val Lys Val Ile Leu
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Trp Ala Gln Glu Gln Glu Pro Leu Gln Thr Gly Leu Phe Cys Ile Thr
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Leu Ile Lys Glu Lys Trp Leu Asn Glu Asp Ile Met Leu Arg Thr Leu
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Lys Val Thr Phe Gln Lys Glu Ser Arg Ser Val Tyr Gln Leu Gln Tyr
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Leu Cys Val His Cys Ser Ala Gly Cys Gly Arg Thr Gly Val Leu Cys
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Thr Val Asp Tyr Val Arg Gln Leu Leu Leu Thr Gln Met Ile Pro Pro
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Asp Phe Ser Leu Phe Asp Val Val Leu Lys Met Arg Lys Gln Arg Pro
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Ala Ala Val Gln Thr Glu Glu Gln Tyr Arg Phe Leu Tyr His Thr Val
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Ala Gln Met Phe Cys Ser Thr Leu Gln Asn Ala Ser Pro His Tyr Gln  
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Asn Ile Lys Glu Asn Cys Ala Pro Leu Tyr Asp Asp Ala Leu Phe Leu  
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Arg Thr Pro Gln Ala Leu Leu Ala Ile Pro Arg Pro Pro Gly Gly Val  
 325 330 335

Leu Arg Ser Ile Ser Val Pro Gly Ser Pro Gly His Ala Met Ala Asp  
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Thr Tyr Ala Glu Glu Gln Lys Arg Gly Ala Pro Ala Gly Ala Gly Ser  
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Gly Thr Gln Thr Gly Thr Gly Thr Gly Ala Arg Ser Ala Glu Glu Ala  
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Pro Leu Tyr Ser Lys Val Thr Pro Arg Ala Gln Arg Pro Gly Ala His  
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Ala Glu Asp Ala Arg Gly Thr Leu Pro Gly Arg Val Pro Ala Asp Gln  
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Ser Pro Ala Gly Ser Gly Ala Tyr Glu Asp Val Ala Gly Gly Ala Gln  
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Arg Asp Pro Pro Ala Glu Trp Thr Arg Val  
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 <212> PRT  
 <213> Unknown Organism

<220>  
 <223> Description of Unknown Organism: Mammalian SIRP4  
 amino acid sequence

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Glu Leu Gln Val Ile Gln Pro Asp Lys Ser Val Ser Val Ala Ala Gly  
 35 40 45

Glu Ser Ala Ile Leu His Cys Thr Val Thr Ser Leu Ile Pro Val Gly  
 50 55 60

Pro	Ile	Gln	Trp	Phe	Arg	Gly	Ala	Gly	Pro	Ala	Arg	Glu	Leu	Ile	Tyr	65	70	75	80
Asn	Gln	Lys	Glu	Gly	His	Phe	Pro	Arg	Val	Thr	Thr	Val	Ser	Glu	Ser	85	90	95	
Thr	Lys	Arg	Glu	Asn	Met	Asp	Phe	Ser	Ile	Ser	Ile	Ser	Asn	Ile	Thr	100	105	110	
Pro	Ala	Asp	Ala	Gly	Thr	Tyr	Tyr	Cys	Val	Lys	Phe	Arg	Lys	Gly	Ser	115	120	125	
Pro	Asp	Thr	Glu	Phe	Lys	Ser	Gly	Ala	Gly	Thr	Glu	Leu	Ser	Val	Arg	130	135	140	
Ala	Lys	Pro	Ser	Ala	Pro	Val	Val	Ser	Gly	Pro	Ala	Ala	Arg	Ala	Thr	145	150	155	160
Pro	Gln	His	Thr	Val	Ser	Phe	Thr	Cys	Glu	Ser	His	Gly	Phe	Ser	Pro	165	170	175	
Arg	Asp	Ile	Thr	Leu	Lys	Trp	Phe	Lys	Asn	Gly	Asn	Glu	Leu	Ser	Asp	180	185	190	
Phe	Gln	Thr	Asn	Val	Asp	Pro	Val	Gly	Glu	Ser	Val	Ser	Tyr	Ser	Ile	195	200	205	
His	Ser	Thr	Ala	Lys	Val	Val	Leu	Thr	Arg	Glu	Asp	Val	His	Ser	Gln	210	215	220	
Val	Ile	Cys	Glu	Val	Ala	His	Val	Thr	Leu	Gln	Gly	Asp	Pro	Leu	Arg	225	230	235	240
Gly	Thr	Ala	Asn	Leu	Ser	Glu	Thr	Ile	Arg	Val	Pro	Pro	Thr	Leu	Glu	245	250	255	
Val	Thr	Gln	Gln	Pro	Val	Arg	Ala	Glu	Asn	Gln	Val	Asn	Val	Thr	Cys	260	265	270	
Gln	Val	Arg	Lys	Phe	Tyr	Pro	Gln	Arg	Leu	Gln	Leu	Thr	Trp	Leu	Glu	275	280	285	
Asn	Gly	Asn	Val	Ser	Arg	Thr	Glu	Thr	Ala	Ser	Thr	Val	Thr	Glu	Asn	290	295	300	
Lys	Asp	Gly	Thr	Tyr	Asn	Trp	Met	Ser	Trp	Leu	Leu	Val	Asn	Val	Ser	305	310	315	320
Ala	His	Arg	Asp	Asp	Val	Lys	Leu	Thr	Cys	Gln	Val	Glu	His	Asp	Gly	325	330	335	
Gln	Pro	Ala	Val	Ser	Lys	Ser	His	Asp	Leu	Lys	Val	Ser	Ala	His	Pro	340	345	350	
Lys	Glu	Gln	Gly	Ser	Asn	Thr	Ala	Ala	Glu	Asn	Thr	Gly	Ser	Asn	Glu	355	360	365	



Arg Asn Ile Tyr Ile Val Val Gly Val Val Cys Thr Leu Leu Val Ala  
 370 375 380  
 Leu Leu Met Ala Ala Leu Tyr Leu Val Arg Ile Arg Gln Lys Lys Ala  
 385 390 395 400  
 Gln Gly Ser Thr Ser Ser Thr Arg Leu His Glu Pro Glu Lys Asn Ala  
 405 410 415  
 Arg Glu Ile Thr Gln Asp Thr Asn Asp Ile Thr Tyr Ala Asp Leu Asn  
 420 425 430  
 Leu Pro Lys Gly Lys Lys Pro Ala Pro Gln Ala Ala Glu Pro Asn Asn  
 435 440 445  
 His Thr Glu Tyr Ala Ser Ile Gln Thr Ser Pro Gln Pro Ala Ser Glu  
 450 455 460  
 Asp Thr Leu Thr Tyr Ala Asp Leu Asp Met Val His Leu Asn Arg Thr  
 465 470 475 480  
 Pro Lys Gln Pro Ala Pro Lys Pro Glu Pro Ser Phe Ser Glu Tyr Ala  
 485 490 495  
 Ser Val Gln Val Pro Arg Lys  
 500

<210> 38  
 <211> 398  
 <212> PRT  
 <213> Unknown Organism

<220>  
 <223> Description of Unknown Organism: Mammalian SIRP1  
 amino acid sequence

<400> 38  
 Met Pro Val Pro Ala Ser Trp Pro His Leu Pro Ser Pro Phe Leu Leu  
 1 5 10 15  
 Met Thr Leu Leu Leu Gly Arg Leu Thr Gly Val Ala Gly Glu Asp Glu  
 20 25 30  
 Leu Gln Val Ile Gln Pro Glu Lys Ser Val Ser Val Ala Ala Gly Glu  
 35 40 45  
 Ser Ala Thr Leu Arg Cys Ala Met Thr Ser Leu Ile Pro Val Gly Pro  
 50 55 60  
 Ile Met Trp Phe Arg Gly Ala Gly Ala Gly Arg Glu Leu Ile Tyr Asn  
 65 70 75 80  
 Gln Lys Glu Gly His Phe Pro Arg Val Thr Thr Val Ser Glu Leu Thr  
 85 90 95  
 Lys Arg Asn Asn Leu Asn Phe Ser Ile Ser Ile Ser Asn Ile Thr Pro  
 100 105 110

Ala Asp Ala Gly Thr Tyr Tyr Cys Val Lys Phe Arg Lys Gly Ser Pro  
 115 120 125  
 Asp Asp Val Glu Phe Lys Ser Gly Ala Gly Thr Glu Leu Ser Val Arg  
 130 135 140  
 Ala Lys Pro Ser Ala Pro Val Val Ser Gly Pro Ala Val Arg Ala Thr  
 145 150 155 160  
 Pro Glu His Thr Val Ser Phe Thr Cys Glu Ser His Gly Phe Ser Pro  
 165 170 175  
 Arg Asp Ile Thr Leu Lys Trp Phe Lys Asn Gly Asn Glu Leu Ser Asp  
 180 185 190  
 Phe Gln Thr Asn Val Asp Pro Ala Gly Asp Ser Val Ser Tyr Ser Ile  
 195 200 205  
 His Ser Thr Ala Arg Val Val Leu Thr Arg Gly Asp Val His Ser Gln  
 210 215 220  
 Val Ile Cys Glu Met Ala His Ile Thr Leu Gln Gly Asp Pro Leu Arg  
 225 230 235 240  
 Gly Thr Ala Asn Leu Ser Glu Ala Ile Arg Val Pro Pro Thr Leu Glu  
 245 250 255  
 Val Thr Gln Gln Pro Met Arg Ala Glu Asn Gln Ala Asn Val Thr Cys  
 260 265 270  
 Gln Val Ser Asn Phe Tyr Pro Arg Gly Leu Gln Leu Thr Trp Leu Glu  
 275 280 285  
 Asn Gly Asn Val Ser Arg Thr Glu Thr Ala Ser Thr Leu Ile Glu Asn  
 290 295 300  
 Lys Asp Gly Thr Tyr Asn Trp Met Ser Trp Leu Leu Val Asn Thr Cys  
 305 310 315 320  
 Ala His Arg Asp Asp Val Val Leu Thr Cys Gln Val Glu His Asp Gly  
 325 330 335  
 Gln Gln Ala Val Ser Lys Ser Tyr Ala Leu Glu Ile Ser Ala His Gln  
 340 345 350  
 Lys Glu His Gly Ser Asp Ile Thr His Glu Pro Ala Leu Ala Pro Thr  
 355 360 365  
 Ala Pro Leu Leu Val Ala Leu Leu Leu Gly Pro Lys Leu Leu Leu Val  
 370 375 380  
 Val Gly Val Ser Ala Ile Tyr Ile Cys Trp Lys Gln Lys Ala  
 385 390 395

&lt;210&gt; 39

&lt;211&gt; 495

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 39

Pro Arg Pro Arg Lys Tyr His Ser Ser Glu Arg Gly Ser Arg Gly Ser  
 1 5 10 15

Tyr His Glu His Tyr Gln Ser Arg Lys His Lys Arg Arg Arg Ser Arg  
 20 25 30

Ser Trp Ser Ser Ser Ser Asp Arg Thr Arg Arg Arg Ala Arg Glu Asp  
 35 40 45

Ser Tyr His Val Arg Ser Arg Ser Ser Tyr Asp Asp His Ser Ser Asp  
 50 55 60

Arg Arg Leu Tyr Asp Arg Arg Tyr Cys Gly Ser Tyr Arg Arg Asn Asp  
 65 70 75 80

Tyr Ser Arg Asp Arg Gly Glu Ala Tyr Tyr Asp Thr Asp Phe Arg Gln  
 85 90 95

Ser Tyr Glu Tyr His Arg Glu Asn Ser Ser Tyr Arg Ser Gln Arg Ser  
 100 105 110

Ser Arg Arg Lys His Arg Arg Arg Arg Arg Ser Arg Thr Phe Ser  
 115 120 125

Arg Ser Ser Ser His Ser Ser Arg Arg Ala Lys Ser Val Glu Asp Asp  
 130 135 140

Ala Glu Gly His Leu Ile Tyr His Val Gly Asp Trp Leu Gln Glu Arg  
 145 150 155 160

Tyr Glu Ile Val Ser Thr Leu Gly Glu Gly Thr Ser Gly Arg Val Val  
 165 170 175

Gln Cys Ile Asp Arg Arg Val Gly Thr Arg Arg Val Leu Val Ile Ile  
 180 185 190

Lys Asn Val Glu Lys Tyr Lys Glu Ala Ala Arg Leu Glu Ile Asn Val  
 195 200 205

Leu Glu Lys Ile Asn Glu Lys Asp Pro Lys Asn Lys Asn Leu Cys Val  
 210 215 220

Gln Met Phe Asp Trp Phe Asp Tyr His Gly His Met Cys Ile Ser Phe  
 225 230 235 240

Glu Leu Leu Gly Leu Ser Thr Phe Asp Phe Leu Lys Asp Asn Asn Tyr  
 245 250 255

Leu Pro Tyr Pro Ile His Gln Val Arg His Met Ala Phe Gln Leu Cys  
 260 265 270

Gln Ala Val Lys Phe Leu His Asp Asn Lys Leu Thr His Thr Asp Leu  
275 280 285

Lys Pro Glu Asn Ile Leu Phe Val Asn Ser Asp Tyr Glu Leu Thr Asn  
290 295 300

Pro Leu Glu Lys Arg Asp Glu Arg Thr Ser Val Lys Ser Thr Ala Val  
305 310 315 320

Arg	Val	Asp	Phe	Gly	Ser	Ala	Thr	Tyr	Phe	Asp	His	His	His	Ser	Thr
				325					330					335	

Leu Ile Ser Thr Arg His Tyr Arg Ala Pro Glu Val Ile Leu Glu Leu  
340 345 350

Gly Trp Ser Gln Pro Cys Asp Val Trp Ser Ile Gly Cys Ile Phe Ile  
355 360 365

Glu Tyr Val Leu Gly Phe Leu Val Gln Pro Thr His Asn Ser Arg Glu  
370 375 380

His Leu Ala Met Glu Arg Ile Leu Gly Pro Val Pro Ser Arg Met Ile  
385 390 395 400

Arg Lys Thr Arg Lys Gln Lys Tyr Phe Tyr Arg Gly Arg Leu Asp Trp  
405 410 415

Asp Glu Asn Thr Ser Ala Gly Arg Tyr Val Arg Glu Asn Cys Lys Pro  
420 425 430

Leu Arg Arg Tyr Leu Thr Ser Glu Ala Glu Asp His His Gln Leu Phe  
435 440 445

Asp Leu Ile Glu Asn Met Leu Glu Tyr Glu Pro Ala Lys Arg Leu Thr  
450 455 460

Leu Gly Glu Ala Leu Gln His Pro Phe Phe Ala Cys Leu Arg Thr Glu  
465 470 475 480

Pro Pro Asn Thr Lys Leu Trp Asp Ser Ser Arg Asp Ile Ser Arg  
485 490 495

<210> 40

<211> 484

<212> PRT

<213> Mus musculus

<400> 40

His Arg Cys Ser Lys Tyr Arg Ser Pro Glu Pro Asp Pro Tyr Leu Thr  
1 5 10 15

Tyr Arg Trp Lys Glu Arg Arg Ser Asp Ser Arg Glu His Glu Gly Arg  
20 25 30

Leu Arg Tyr Pro Ser Arg Lys Glu Pro Pro Pro Arg Ala Ser Ser Arg  
35 40 45

Glu	Asp	Ala	Pro	Tyr	Arg	Thr	Arg	Lys	His	Ala	His	His	Cys	His	Lys	50	55	60
Ile	Arg	Thr	Arg	Ser	Cys	Ser	Ser	Ala	Ser	Ser	Arg	Ser	Gln	Gln	Ser	65	70	75
Ser	Lys	Arg	Ser	Ser	Arg	Gly	Glu	Ser	Arg	Glu	Arg	Ala	Pro	Tyr	Arg	85	90	95
Thr	Arg	Lys	His	Ala	His	His	Cys	His	Lys	Arg	Arg	Thr	Arg	Ser	Cys	100	105	110
Ser	Ser	Ala	Ser	Ser	Arg	Ser	Gln	Gln	Ser	Ser	Lys	Arg	Ser	Ser	Arg	115	120	125
Ser	Val	Glu	Asp	Asp	Lys	Glu	Gly	His	Leu	Val	Cys	Arg	Ile	Gly	Ser	130	135	140
Trp	Leu	Gln	Glu	Arg	Tyr	Glu	Ile	Val	Gly	Asn	Leu	Gly	Glu	Gly	Thr	145	150	155
Phe	Gly	Lys	Val	Val	Glu	Cys	Leu	Asp	His	Ala	Arg	Gly	Lys	Ser	Gln	165	170	175
Val	Ala	Leu	Lys	Ile	Ile	Arg	Asn	Val	Gly	His	Tyr	Arg	Glu	Ala	Ala	180	185	190
Arg	Leu	Glu	Ile	Asn	Val	Leu	Lys	Lys	Ile	Lys	Glu	Lys	Asp	Lys	Glu	195	200	205
Asn	Lys	Phe	Leu	Cys	Val	Leu	Met	Ser	Asp	Trp	Asn	Phe	His	Arg	Gly	210	215	220
Met	Ile	Cys	Ala	Val	Glu	Leu	Leu	Gly	Lys	Asn	Thr	Phe	Glu	Phe	Leu	225	230	235
Lys	Glu	Asn	Asn	Phe	Gln	Pro	Tyr	Pro	Leu	Pro	His	Val	Arg	His	Met	245	250	255
Ala	Tyr	Gln	Leu	Cys	His	Ala	Leu	Arg	Phe	Leu	His	Glu	Asn	Gln	Leu	260	265	270
Thr	His	Thr	Asp	Leu	Lys	Pro	Glu	Asn	Ile	Leu	Phe	Val	Asn	Ser	Asp	275	280	285
Glu	Phe	Glu	Thr	Leu	Pro	Lys	Glu	His	Lys	Ser	Cys	Glu	Thr	Lys	Ser	290	295	300
Val	Lys	Asp	Thr	Ser	Ile	Arg	Asp	Ala	Gly	Ser	Ala	Thr	Tyr	Asp	Phe	305	310	315
Glu	His	His	Ser	Thr	Thr	Val	Ile	Ala	Thr	Arg	His	Tyr	Arg	Pro	Pro	325	330	335
Glu	Val	Ile	Leu	Glu	Leu	Gly	Trp	Ala	Gln	Pro	Cys	Asp	Val	Trp	Ser	340	345	350

Ile Gly Cys Ile Leu Phe Glu Tyr Tyr Arg Gly Phe Thr Leu Phe Gln  
 355 360 365  
 Thr His Asp Ser Lys Glu His Leu Ala Met Met Glu Lys Ile Leu Gly  
 370 375 380  
 Pro Ile Pro Ser His Met Ile His Arg Thr Arg Lys Gln Lys Tyr Phe  
 385 390 395 400  
 Tyr Lys Gly Gly Leu Val Trp Asp Glu Asn Ser Ser Asp Gly Arg Tyr  
 405 410 415  
 Val Lys Glu Asn Cys Lys Pro Leu Lys Ser Tyr Met Leu Gln Asp Ser  
 420 425 430  
 Leu Glu His Val Gln Leu Phe Asp Leu Met Arg Arg Met Leu Glu Phe  
 435 440 445  
 Asp Pro Ala Gln Arg Ile Thr Leu Ala Glu Ala Leu Leu His Pro Phe  
 450 455 460  
 Phe Ala Gly Leu Thr Pro Glu Glu Arg Ser Phe His Ser Ser Ser Arg  
 465 470 475 480  
 Asn Pro Ser Arg

<210> 41  
 <211> 481  
 <212> PRT  
 <213> Mus musculus

<400> 41  
 Met Arg His Ser Lys Arg Thr His Cys Pro Asp Trp Asp Ser Arg Glu  
 1 5 10 15  
 Ser Trp Gly His Glu Ser Tyr Ser Gly Ser His Lys Arg Lys Arg Arg  
 20 25 30  
 Ser His Ser Ser Thr Gln Glu Asn Arg His Cys Lys Pro His His Gln  
 35 40 45  
 Phe Lys Asp Ser Asp Cys His Tyr Leu Glu Ala Arg Cys Leu Asn Glu  
 50 55 60  
 Arg Asp Tyr Arg Asp Arg Arg Tyr Ile Asp Glu Tyr Arg Asn Asp Tyr  
 65 70 75 80  
 Cys Glu Gly Tyr Val Pro Arg His Tyr His Arg Asp Val Glu Ser Thr  
 85 90 95  
 Tyr Arg Ile His Cys Ser Lys Ser Ser Val Arg Ser Arg Arg Ser Ser  
 100 105 110  
 Pro Lys Arg Lys Arg Asn Arg Pro Cys Ala Ser His Gln Ser His Ser  
 115 120 125

Lys	Ser	His	Arg	Arg	Lys	Arg	Ser	Arg	Ser	Ile	Glu	Asp	Asp	Glu	Glu	130	135	140
Gly	His	Leu	Ile	Cys	Gln	Ser	Gly	Asp	Val	Leu	Arg	Ala	Arg	Tyr	Glu	145	150	155
Ile	Val	Asp	Thr	Leu	Gly	Glu	Gly	Ala	Phe	Gly	Lys	Val	Val	Glu	Cys	165	170	175
Ile	Asp	His	Gly	Met	Asp	Gly	Leu	His	Val	Ala	Val	Lys	Ile	Val	Lys	180	185	190
Asn	Val	Gly	Gly	Tyr	Arg	Glu	Ala	Ala	Arg	Ser	Glu	Ile	Gln	Val	Leu	195	200	205
Glu	His	Leu	Asn	Ser	Thr	Asp	Pro	Asn	Ser	Val	Phe	Arg	Cys	Val	Gln	210	215	220
Met	Leu	Glu	Trp	Phe	Asp	His	His	Gly	His	Val	Cys	Ile	Val	Phe	Glu	225	230	235
Leu	Leu	Gly	Leu	Ser	Thr	Tyr	Asp	Phe	Ile	Lys	Glu	Asn	Ser	Phe	Leu	245	250	255
Pro	Phe	Gln	Ile	Asp	His	Ile	Arg	Gln	Met	Ala	Tyr	Gln	Ile	Cys	Gln	260	265	270
Ser	Ile	Asn	Phe	Leu	His	His	Asn	Lys	Leu	Thr	His	Thr	Asp	Leu	Lys	275	280	285
Pro	Glu	Asn	Ile	Leu	Phe	Val	Lys	Ser	Asp	Tyr	Val	Val	Lys	Asn	Pro	290	295	300
Ser	Met	Lys	Arg	Asp	Glu	Arg	Thr	Ile	Leu	Lys	Pro	Thr	Asp	Ile	Lys	305	310	315
Val	Val	Asp	Phe	Gly	Ser	Ala	Thr	Tyr	Asp	Asp	Glu	His	His	Ser	Thr	325	330	335
Leu	Val	Ser	Thr	Arg	His	Tyr	Arg	Ala	Pro	Glu	Val	Ile	Leu	Ala	Leu	340	345	350
Gly	Trp	Ser	Gln	Pro	Cys	Asp	Val	Trp	Ser	Ile	Gly	Cys	Ile	Leu	Ile	355	360	365
Glu	Tyr	Tyr	Leu	Gly	Phe	Thr	Val	Phe	Gln	Thr	His	Asp	Ser	Lys	Glu	370	375	380
His	Leu	Ala	Met	Met	Glu	Arg	Ile	Leu	Gly	Pro	Ile	Pro	Ala	His	Met	385	390	395
Ile	Gln	Lys	Thr	Arg	Lys	Arg	Lys	Tyr	Phe	His	His	Asn	Gln	Leu	Asp	405	410	415
Trp	Asp	Glu	His	Ser	Ser	Ala	Gly	Arg	Tyr	Val	Arg	Arg	Arg	Cys	Lys	420	425	430

Pro Leu Lys Glu Phe Met Leu Cys His Asp Glu Glu His Glu Lys Leu  
435 440 445

Phe Asp Leu Val Arg Arg Met Leu Glu Tyr Asp Pro Ala Arg Arg Ile  
450 455 460

Thr Leu Asp Glu Ala Leu Gln His Pro Phe Phe Asp Leu Leu Lys Arg  
465 470 475 480

Lys